PROFIBUS

PROFIBUS is the world’s most successful fieldbus technology with millions of devices installed in the field worldwide. Utilizing a single, standardized communication protocol, PROFIBUS supports fieldbus solutions both in factory and process automation as well as in motion control and safety-related applications. Via a single bus cable, PROFIBUS links controllers or control systems with decentralized field devices and also enables consistent data exchange with higher level communication systems.

PROFINET

PROFINET is the leading Industrial Ethernet standard in the automation market. This globally established and future-oriented technology is supported by many product vendors, thus ensuring long-term availability and investment protection. PROFINET uses standard IEEE Ethernet with enhanced capabilities to meet the more challenging conditions in industrial applications.

In Process Automation (PA), quick installation and easy operation and exchange of field devices are important user requirements, necessary of all device manufacturers. Therefore, a common set of device parameters for commissioning, operation, maintenance and diagnostics has been defined for process control devices. This Profile PA Devices simplifies utilization of devices for many years. In 2017 PI has developed the new Profile PA Devices 4.0 that can be used with PROFIBUS as well as PROFINET.

Unmatched in Performance and Benefits

PROFINET over APL

FDI

The "Field Device Integration" technology offers an uniform solution for the handling of information derived from intelligent field devices. FDI supports all required measures during the entire lifecycle of devices, from configurations and commissioning up to diagnosis and calibration. No other procedures are required anymore. FDI is the consistent solution that addresses all end user requirements.

PROFINET over APL communication based on Ethernet APL to the field, enabling one network throughout the entire plant to simplify the complexity of gateways of both hardware and engineering. One single communication protocol combined with high bandwidth allows access to device and process data in real time.

Reduction of Overall Costs

› Shorter Planning and Design Phases
  Profile PA Devices Provides Vendor-Neutral Engineering

› Free Choice of Supplier and Field Device
  Profile PA Devices Offers Standard Functionality for Field Devices; Numerous Vendors of Devices with New Profile for PA Devices Available

› Reduced Installation and Commissioning Efforts
  Automatic Installation Text, Remote Device Testing and Configuration

› Highly Effective Maintenance and Repair Processes
  Simplified Field Device Diagnosis According to NAMUR NE107, Easy Device Exchange without Complex Parameterization

More Information on the PI Technologies:
www.profibus.com/technology

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Comprehensive User Benefit
Key Technologies:
PROFIBUS, PROFINET, Profile PA Devices 4.0, FDI and Ethernet APL

Increased Overall Performance
- Increased Plant Availability and Asset Utilization
  Wide Information Base Cares for Undisturbed Plant Operation
- Highest Possible Measuring Accuracy
  Fully-Digital Data Handling Ensures Highest Possible Process Quality
- Extensive Consideration of User Expertise
  NAMUR Device Diagnosis and Core Parameters Simplify Device Handling
- Freedom of Supplier and Manufacturer Selection
  Profile PA Devices Stands for Best Possible Interoperability

Integration of Existing and Future Field Technologies
- Supporting Legacy Field Devices
  Superior Proxy technology integrates any PROFIBUS PA device into PROFINET seamlessly.
  The Remote I/O profile provides standard integration for any sensor or actor
- Field Network with PROFINET over APL
  High speed network in the field with ethernet-based PROFINET over APL.
  Power and communication on two-wires, up to 1000 m segments, intrinsic safety for any hazardous area including Zone 0 / Div. 1
- High-speed Communication Everywhere
  Gigabit-Ethernet in the control room. Direct connection between automation system and field devices
- Seamless Integration and Ease of Adaptation
  Calibrate and configure instruments remotely and eliminate manual scaling of process variables.
  Automatic writing of parameters without additional parametrization through communication protocol PROFINET and PA Profile. Deployable step by step – where and when required

Path to the Future
- Seamless Connectivity between Automation Technology and IIoT World
  Digital Connectivity to the Last Mile Provided by PROFIBUS and PROFINET;
  Easy Access to all Data from Everywhere
- Full Compatibility to TCP/IP, Internet and Web
  PROFINET Allows Parallel Communication e.g. through TCP/IP – and is More Than just a Bus, It’s an Information Network
- Supporting FDI as Future-Proof Device Integration Technology
  Profile PA Devices Provides Comprehensive Semantic Information for e.g. Big Data Applications
- PI as Platform for Integration Existing with Future Technologies
  Development of New Technologies with Partners from All Steps of the Value Chain (OPC UA, FCG, NAMUR) to Create Open Solutions for All Requirements from a Process Plant

Long-Term Investment Protection
- Integration of Existing and Future Field Technologies
- Seamless Connectivity between Automation Technology and IIoT World
- Full Compatibility to TCP/IP, Internet and Web
- Supporting FDI as Future-Proof Device Integration Technology
- PI as Platform for Integration Existing with Future Technologies